

HETEROMYSINI FROM GRAND BAHAMA ISLAND:
DESCRIPTION OF *HETEROMYSIS AGELAS*,
NEW SPECIES, FIRST DESCRIPTION OF
MALE *H. FLORIDENSIS*, AND NOTES ON
H. GUITARTI (CRUSTACEA: MYSIDACEA)

Richard F. Modlin

Abstract. — *Heteromysis agelas* is described from waters near Freeport, Grand Bahama Island. The first description of the male of *H. floridensis*, known previously from a single female specimen, is presented. Additional ecological information on *H. guitarti* is provided.

Species in the tribe Heteromysini, because of their cryptic mode of existence, are rarely obtained when usual collecting techniques are employed. The species described and discussed herein were obtained by SCUBA divers when they examined or collected substrates (hosts) on the sea bottom that contained heteromysids. Although about 22 species in this tribe have been reported from the western Atlantic Ocean, only *Heteromysoides dennisi* Bowman (1985) has previously been reported from waters off Grand Bahama Island. Two other heteromysids are known from the Bahama Islands. Clarke (1955) described *Heteromysis actiniae* from waters off Bimini and discussed its commensal relationship with the sea anemone *Bartholomea annulata*. This species has since been reported from Lyford Cay and Paradise Island (Brattegard 1970). Brattegard (1970) obtained two specimens of *H. guitarti* from a sponge collected off Andros Island. Herein is described a new species of *Heteromysis* and the male of *H. floridensis*, and some additional ecological information is presented for *H. guitarti*.

Type specimens of the new species and the collection that contained *H. floridensis* have been deposited in the U.S. Museum of Natural History (USNM). The remaining specimens are in the museum of the Marine Environmental Sciences Consortium at the

Dauphin Island Sea Lab, Dauphin Island, Alabama (MESC).

Heteromysis agelas, new species
Fig. 1

Material examined. — Male, 4.7 mm, holotype (USNM 228745); 5.2 mm male, 5.0 mm female, paratypes (USNM 228746); and 3 males (4.0–5.2 mm), 4 females (4.0–5.1 mm), 3 ovigerous females (4.6–5.5 mm), and 6 juveniles (2.4–3.0 mm) taken from 8 different specimens of the sponge *Agelas dispar* collected by J. Uebelacker near the November 1975 Hydro-Lab habitat location off Freeport, Grand Bahama Island, at depths from 15–17 m.

Description. — Body robust. Carapace with anterior margin produced into triangular rostrum, posterior margin deeply emarginate, partly exposing thoracic segment 7 and all of 8, anterolateral lobes rounded. Eyes large, oval, distinctly stalked and directed laterally; cornea large, oval, medial margin slightly scalloped with strong ocular tooth on anterosuperior edge.

Antennular peduncle 3-segmented; segment 1 about as long as segment 3; segment 2 compressed, with small spine on medial surface; segment 3 with plumose seta on medial surface, robust blade-like spine with subterminal flagellum, 2 plumose setae and



Fig. 1. *Heteromysis agelas*: A, Carapace, dorsal; B, Carapace, lateral; C, Antennular peduncle; D, Antennal peduncle and scale; E, Mandible, right; F, Mandible, left; G, Mandibular palp; H, Thoracic endopod 3; I, Thoracic endopod 3, carpopropodus and dactylus; J, Pleopod 3; K, Pleopod 4; L, Uropod; M, Telson. A-B = male, 5.2 mm, USNM 228746; C-I, L-M, = female, 5.1 mm; J-K = male, 5.0 mm.

1 naked seta distomedially, 2 small plumose setae mid-dorsally, male lobe ventrally with few long hair-like setae.

Antennal scale blade-like, about 0.8 times length of peduncle, medial margin strongly convex, lateral margin slightly convex, setose all around, apical segment about 0.06 times length of scale. Antennal peduncle 3-segmented, segment 1 inconspicuous; segment 2 1.2 times longer than 3, short robust plumose seta near distolateral edge, 4 naked setae distomedially; segment 3 with 4 naked setae distomedially.

Mandibles and palp: Right and left mandibles with blade-like incisors, right incisor with large anterior cusp, left with anterior and posterior cusp; right lacinia mobilis with 5 cusps, left with 4 cusps; each mandible with 3 strong setose accessory blades in spine row; left molar region more strongly developed than right. Mandibular palp 3-segmented; segment 1 small, inconspicuous; segment 2 expanded, medial margin with 16 naked setae, lateral margin with 10 naked setae; segment 3 medial margin sinuous, proximal half with 2 long naked setae and 3 robust spined setae, distal half with about 5 short spines and 1 long plumose seta, apex with 2 long robust spine setae, 4 long simple setae on lateral surface.

Labrum, maxillule, maxillae, and paragnaths typical of genus.

Thoracic endopods 1 and 2 typical of genus. Thoracic endopod 3, ischium about 1.4 times longer than carpopropodus, medial margin with 3 long and 4 short simple setae, small protuberance distomedially, lateral margin with 1 simple seta proximally and 1 simple seta distolaterally; medial margin of carpopropodus with 5 robust flagellated spines arranged as 2 pairs of equal-length spines distal to single short spine, 3 long simple setae submarginal to spinal groups, 2 short simple setae proximally, 1 simple seta distally; dactylus inconspicuous with 2 simple setae distolaterally, terminating in long robust claw with 3 simple setae at mid-length. Carpopropodus 3-segmented in tho-

racic endopod 4; 6-segmented in thoracic endopods 5–8. Thoracic exopod 1 with 9 segments; exopods 2–8 each with 10 segments.

Pleopods unsegmented; male pleopods 1, 2, and 5 not differentiated. Pleopod 3 with 8 robust plumose setae along anterior surface, 4 flagellated spines along distal margin and 1 naked long robust seta distolaterally, 2 short robust plumose setae proximally on posterior surface, distal margin of pseudobranchial lobe with 4 long and 1 short plumose setae. Pleopod 4 with 8 robust plumose setae along anterior surface, 5 flagellated spines on distal margin and 1 simple long robust seta distolaterally, 2 short robust plumose setae proximally on posterior surface, distal margin of pseudobranchial lobe with 4 long and 1 short plumose setae. Female pleopods rudimentary.

Uropods: Exopod about 1.1 times longer than endopod, lateral margin straight, medial margin slightly convex, setose all around. Endopod linguiform with 2 small spines on medial margin in region of statocyst, setose all around.

Telson 0.8 times length of exopod of uropod, lateral margins slightly concave, completely spined with 15–16 spines per margin (apical spines included), marginal spines in distal half slightly longer than proximal group, outer apical spine 2.5 times longer than inner, cleft completely spined with 12 spines, 0.2 times length of telson.

Remarks.—*Heteromysis agelas* appears to be intermediate between *H. bredini* Brattegard, 1970, and *H. guitarti* Bacescu, 1968; (Brattegard 1970). It differs from *H. bredini* by having the antennal scale shorter than the antennal peduncle, 5 rather than 10 flagellated spines on the carpopropodus of thoracic endopod 3, 2 short rather than 5 long spines in the region of the statocyst, and a telson with 15–16 instead of 19–20 spines on each lateral margin and 12 rather than 31 spines in the telsonal cleft. Similarly, *H. guitarti* has 7 flagellated spines on the medial margin of the carpopropodus of tho-

racic endopod 3, 4 long spines on the endopod of the uropod in the vicinity of the statocyst, 9–10 spines on each lateral margin of the telson and 16–21 spines in the cleft of the telson. Males of *H. guitarti* and *H. agelas* have pleopods 3 and 4 modified. Pleopods 3 and 4 of the latter have, respectively, 4 and 5 flagellated spines on the distal margins rather than 2 and 9 as does the former. Males of *H. bredini* have not been described.

Ecological notes.—Eight of the 19 specimens of *Agelas dispar* examined contained *H. agelas*. The average number of individuals taken from a sponge was two, range one to five. The three ovigerous females each carried two eggs. Modlin (1984) obtained specimens of *H. beetoni* from *A. dispar* collected on the Florida Middle Grounds in the Gulf of Mexico.

Etymology.—Named for the sponge, *Agelas dispar*, with which this mysid was found associated.

Heteromysis floridensis Brattegard, 1969
Fig. 2

Heteromysis floridensis was described from a single female specimen collected in Biscayne Bay, Florida (Brattegard 1969). No other specimens of this species have since been reported. This report describes the male of the species for the first time and extends the range of *H. floridensis* to include the northern end of the Bahama Islands, specifically Little Bahama Bank.

Only those morphological features of *H. floridensis* that have not been described and that differ from Brattegard's (1969) original description are discussed.

Material examined.—Male (3.7 mm), 25 Oct 1982, voucher (USNM 228747); 2 females (3.2, 3.5 mm), 2 ovigerous females (4.5 mm), 11 Nov 1983, voucher (USNM 228748); all collected near entrance to Cemetery Cave, Grand Bahama Island, an oceanic blue hole about 100 m off the south coast of the island, depth 3–4 m, collected

by Jill Yager. The actual substrate from which the specimens were taken is unknown.

Description.—Antennular peduncle of male like that of female, but with prominent male lobe on ventral surface of segment 3 that contains many long hair-like setae.

Mandibles and palp: Right and left mandible incisor blade-like with single cusp, right lacinia mobilis with 2 prominent cusps, left lacinia mobilis with 2 slightly curved cusps, both mandibles with 2 robust serrate accessory blades, molar surface well developed on right mandible, weakly developed on left mandible. Mandibular palp segment 2 expanded, medial margin straight, armed with 12–13 simple setae, lateral margin convex, armed with 4 simple setae; distal segment medial margin sinuous, armed proximally to distally with 5 robust spined setae, about 5 small serrate setae, 2 long spined setae and terminal claw-like spine, lateral margin convex armed with 2 long and 2 short submarginal setae distally.

Thoracic endopod 3, merus without barbed spines on lateral surface described by Brattegard (1969); carpopropodus with 6 rather than 5 strong flagellate spines on medial margin, distal 4 arranged in 2 paired sets, proximal 2 slightly longer and arranged singly.

Pleopod 4 of male modified, lateral margin armed with 5 long submarginal plumose setae proximally, 26 closely-spaced flagellate denticles along distal margin, slightly longer simple seta distomedially, medial margin with 2 plumose setae proximally; pseudobranchial lobe with 4 long and 1 short plumose setae.

Uropod endopod with 14, rather than 19, subequal spines along medial margin.

Telson with 8 spines on distal half of each lateral margin (apical spines included) increasing in length distally, cleft with 10–11 spinule in apical half rather than 9.

Ecological note.—The two 4.5 mm ovigerous females carried three and five stage IV larvae, respectively.

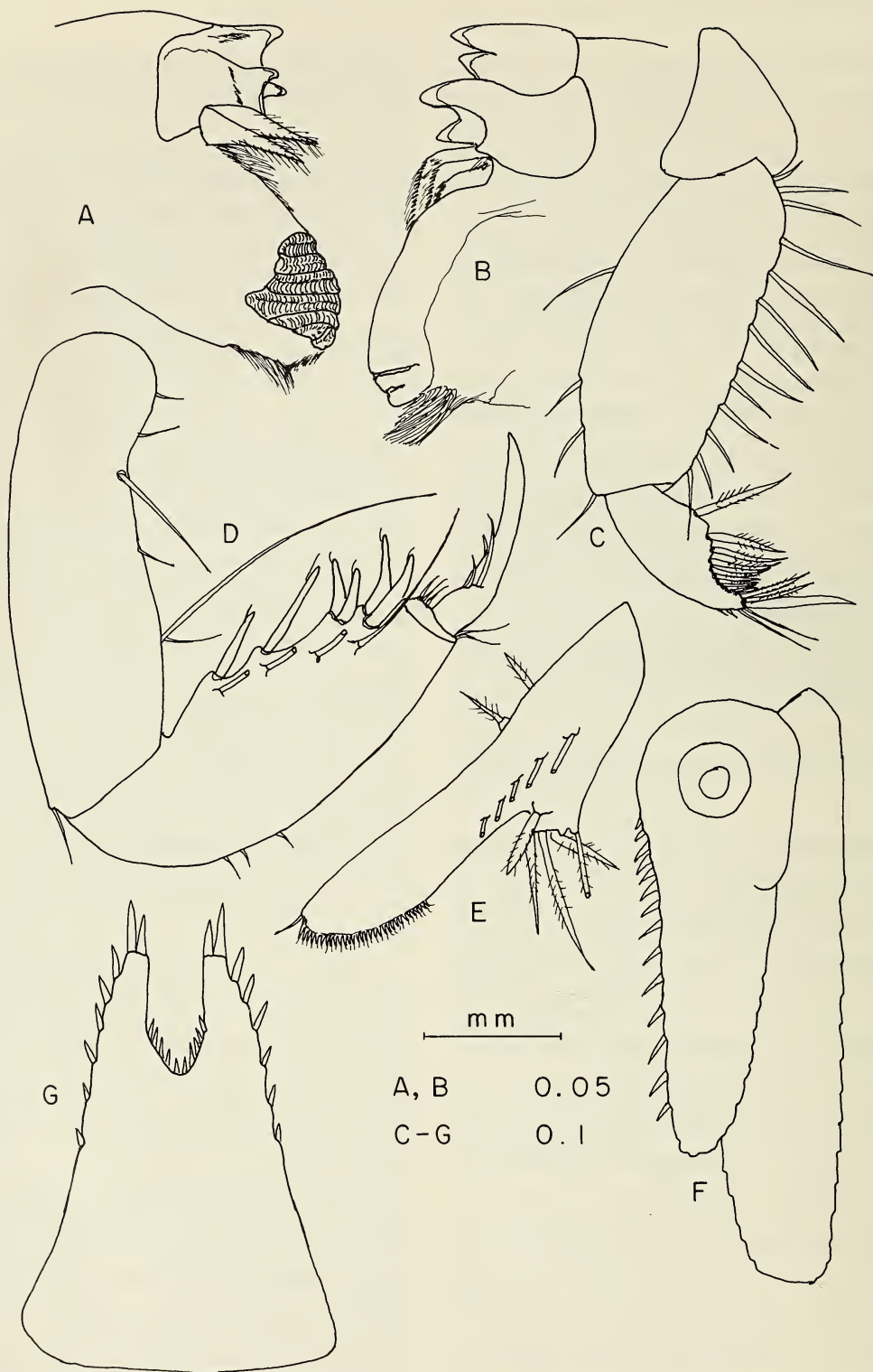


Fig. 2. *Heteromysis floridensis*: A, Mandible, right; B, Mandible, left; C, Mandibular palp; D, Thoracic endopod 3; E, Pleopod 4; F, Uropod; G, Telson. A-G = male, 3.2 mm.

Comments.—The characters of the male *H. floridensis* strengthen the phylogenetic relationship suggested by Brattegard (1969) between *H. bermudensis*, *H. b. cesari*, *H. actiniae*, and *H. floridensis*. Among other similarities, all four species have about the same number (6–12) of spines on the lateral margins of the telson and in the telsonal cleft (9–20), and all males have pleopod 4 modified. Assuming that a reduction in spines suggests evolutionary advancement, *H. bermudensis* would be the plesiomorph because it has the most spines on key morphological features. For example, its male pleopod 4 has 35 flagellated spines on the distal margin (Bowman 1981) and its telson has 18–20 spinules in its cleft. Distal margins of the fourth pleopod of *H. b. cesari*, *H. actiniae*, and *H. floridensis* have, respectively, 26, 17, and 26 flagellate spines, while the clefts of their telsons contain 14, 9–13, and 9–11 spines (Brattegard 1969, Bowman 1981).

Heteromysis guitarti Bacescu, 1968

Material examined.—8 males (3.3–3.7 mm), 6 females (2.9–3.7 mm), 2 ovigerous (4.0, 4.1 mm), 3 juveniles (2.2–2.4 mm) taken with 12 specimens of the sponge *Agelas dispar* collected during November 1975 by J. Uebelacker near the Hydro-Lab habitat location off Freeport, Grand Bahama Island at depths from 15–17 m.

Geographic distribution.—Originally collected in waters off northern Cuba (Bacescu 1968), also reported from waters off Andros Island, Bahama Islands (Brattegard 1970), Lesser Antilles (Brattegard 1975), and Gulf of Mexico (Modlin 1984).

Ecological notes.—*Heteromysis guitarti* appears to be a true spongicolous species. It was found in 12 of the 19 specimens of *Agelas dispar* examined. An average of about two individuals were taken in each sponge, range one to four. It occurred together with *H. agelas* in three sponges. Modlin (1984) obtained specimens from the sponge *Iricinia campana*. Likewise, Bacescu (1968)

found specimens inhabiting *I. fasciculata*. Specimens collected by Brattegard (1970, 1975) were taken from unidentified sponges.

The two ovigerous females collected each carried two stage I larvae.

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Department of Biological Sciences, The University of Alabama in Huntsville, Huntsville, Alabama 35899.